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In This Issue

ACADEMY NOMINATIONS FOR
BEST CINEMATOGRAPHY—1945



MARCH
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AMERICAN CINEMATOPHILE

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 27

MARCH, 1946

NO. 3

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ON THE FRONT COVER is a photograph on the set of Metro-Goldwyn-Mayer's Technicolor production of "The Yearling," with Director Clarence Brown (directly under camera) running through final rehearsal of scene with Jane Wyman. Director of Photography Charles Rosher, A.S.C., is seated on right side of the camera blimp.



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ACADEMY AWARD NOMINATIONS FOR BEST CINEMATOGRAPHY OF 1945



ARTHUR MILLER, A.S.C.
"King of the Kings"—20th Fox



JOHN WURTZ, A.S.C.
"The Lost Weekend"—Columbia



ERNEST HALLER, A.S.C.
"Midnight Fiesta"—Metro-Borlino



HARRY SHADLOCK, A.S.C.
"Picture of Dorian Gray"—MGM



GEORGE BARNES, A.S.C.
"Spencer"—Selznick
"The Spanish Main"—RKO

HERE they are! The outstanding achievements in cinematography on motion picture production released during the year 1945, selected from the 366 odd feature releases of the year.

And the productions and individual accomplishments of the Directors of Photography responsible, are so designated by the outstanding experts in the field most qualified to make the selections—the entire group of Directors of Photography and members of the American Society of Cinematographers—the latter internationally recognized as the most qualified authorities on the complex photographic qualities necessary for designation as outstanding accomplishments.

Listed herewith are the five black-and-white and the five color productions released during 1945, which are considered the most outstanding by the men who photograph virtually all of the feature products of Hollywood—the Directors of Photography. The combined decision in procedure as set up by the Academy of Motion Picture Arts and Sciences cannot be discounted in its importance and inter-

est for those interested in motion picture photography.

Noteworthy Recognition

There is neither guesswork nor favoritism in selection of either the five nominated productions or their individual Directors of Photography in both the monochrome and color fields; nor is there on the final balloting which selects the Academy Award winners in both black-and-white and color photography. Voting in each case is strictly on the merits of the productions submitted to the voters, and their careful analysis of the photographic merits of each entry.

Nomination Procedure

An act up by the special Cinematography Award Eligibility Committee of the Academy of Motion Picture Arts and Sciences, nomination procedure allows for no haphazard selections, neither does it ignore any film production released during the year.

Each Director of Photography has the opportunity of submitting one black-and-white production, and/or one color production on which he has received single

OUTSTANDING CINEMATOGRAPHY OF 1945

BLACK AND WHITE

- "Keys of the Kingdom"—20th Century-Fox—by Arthur Miller, A. S. C.
 "The Lost Weekend"—Paramount—by John Seitz, A. S. C.
 "Mildred Pierce"—Warner Brothers—by Ernest Haller, A. S. C.
 "Picture of Dorian Gray"—Metro-Goldwyn-Mayer—by Henry Stradling, A. S. C.
 "Spellbound"—Selznick International—by George Berns, A. S. C.

COLOR

- "Anchors Aweigh"—Metro-Goldwyn-Mayer—by Robert Flank, A. S. C. and Charles Boyle, A. S. C.
 "Leave Her to Heaven"—by 20th Century-Fox—by Leon Shamroy, A. S. C.
 "National Velvet"—Metro-Goldwyn-Mayer—by Len Smith, A. S. C.
 "A Song to Remember"—Columbia—by Tony Gaudio, A. S. C.
 "The Spanish Main"—RKO—by George Berns, A. S. C.



LEON SHAMROY, A.S.C.
 "Leave Her to Heaven"—20th Fox



LEN SMITH, A.S.C.
 "National Velvet"—MGM

or joint screen credit. All such productions so submitted are listed on the nomination ballot, with the Directors of Photography of the industry then voting for five pictures in each classification in order of preference. This cross-section of expert opinion has been found to be the best method of determining the five productions of each classification to be presented as the top nominations for the final vote.

But, although the Academy Award can only go to one of the quintette in each class, the final result will not—and cannot—detract from the outstanding photographic merits of the other four productions and the individual Directors of Photography concerned.

Veteran Cinematographers

Of the ten cinematographers recommended for outstanding photography as productions during 1945—all of whom by the way are naturally members of American Society of Cinematographers—it might be pointed out that all are veteran cinematographers with comprehensive experience in film production—and

all have been top-ranking artists as Directors of Photography for 15 or more years.

Previous Awards Winners

Half of the ten Directors of Photography who have had their productions nominated for the Academy Oscars as productions released in 1945 are previous Academy Award winners, and two have made the trip to the Award platform on two occasions each. Arthur Miller was the recipient for his excellent photography of "Song of Bernadette" and "How Green Was My Valley"—both 20th-Fox releases and both photographed in black-and-white.

Leon Shamroy, nominated this year for his color photography on "Leave Her to Heaven," tabbed the Oscars for color photography on two previous occasions with his "Wilson" last year and "The Black Swan" several years ago.

Ernest Haller, in the running this year with the black-and-white photography on Warner's "Mildred Pierce," received the

(Continued on Page 16)



ROBERT FLANK, A.S.C.

"Anchors Aweigh"—MGM



CHARLES BOYLE, A.S.C.



TONY GAUDIO, A.S.C.
 "A Song to Remember"—Columbia

CINEMATOGRAPHY IN THE WAR

FILMING ROCKET PROJECTILE TESTS FOR THE NAVY

With Commander Al L. Gilks, A.S.C.

PHOTOGRAPHING rocket projectiles whizzing through the air at speeds up to 1,500 feet per second! Seems impossible, but nevertheless was successfully accomplished by a Navy photographic unit headed by Commander A. L. Gilks, USNR, and veteran member of the American Society of Cinematographers.

Motion pictures of the testing and development of rocket projectiles proved a most important contribution in speed-up of the research and perfection of such weapons for use in the war. The rocket program, top secret and top priority, was instituted by the Navy Department in association with the National Development Research Council's rocket program at California Institute of Technology, Pasadena, Calif.

To the scientists and others intimately concerned with the research and development of ground, amphibious, and airborne rocket projectiles, the ability of motion pictures to register the details of launching, trajectory, landing and explosion of a rocket—especially in

view of the terrific speed of each flight—was not initially realized. But fortunately, Commander Gilks was requested to make one film dealing with early tests of barrage rockets launched from small landing craft. In carrying out that particular mission, Commander Gilks was brought into contact with the scientists and engineers charged with the development of rocket weapons, who decided that—in view of the initial filming results—that motion pictures could be of inestimable value to the overall program from many angles.

As a result, on his own initiative and with the full blessing of the scientists concerned, Commander Gilks made several short film subjects of other rocket research projects under way at the time. These films, which were actually pioneer visual reports on the tests and developments on rocket weapons, proved so valuable to the scientists and Naval strategists, that Admiral Holmes, USN, naval liaison officer, dispatched a request to General William Donovan, chief of the Office of Strategic Services, asking

that Commander Gilks be assigned permanently to continue such film work. At this point, he was placed in charge of a small—but highly specialized and capable motion picture unit—of members of which had had wide and extensive experience in the studios.

Gilks Veteran Cinematographer

Commander Gilks is a veteran among the Directors of Photography of Hollywood, having been under term contract to Paramount for a number of years in addition to handling assignments at other major studios. With his vast experience and background in regulation production cinematography, he was most qualified to tackle the problem of getting the required results for the scientists and Naval officials on the rocket projectile program.

Navy veteran of World War I, at conclusion of which he held the rank of Lieutenant (jg), Gilks re-joined the Naval Reserve in 1940. Called to active duty as a Lieutenant, he was assigned to photographic duty with the Office of Strategic Services. Immediately after Pearl Harbor, he was sent to the Panama Canal Zone in charge of a photographic unit to make a highly confidential motion picture report on that area—especially the defense setup of that period. The large amount of film shot was most important to the joint Chiefs of Staff, who viewed it as a visual report more detailed and informative than hundreds of thousands of words. The film, for which Commander Gilks received special commendation, was kept as "top secret" during the entire war, but proved instrumental in quickly correcting certain conditions and situations which needed remedying in the Canal Zone defense. On the Panama Canal assignment, he had under his command a small



Illustrating camera setup for photographing diverse types of rocket projectile tests. Camera 1 at left with long focal length lens of two-and-one-half to six inches, depending on requirements—gives detail of launching itself; in close-up, and follows projectile through to target area. Camera 2 set up midway on line of flight—carries longest focal length lens (four or six-inch)—gives head-on, and provides close-up view in center of flight. Camera 3 with photographic telephoto lens and telephoto, providing close-up frames in the target area. Great skill was required by the cameramen to keep the speeding rocket in frame during entire course.

photographic unit, but which comprised mainly top-ranking studio cameramen well-qualified for the work through wide experience on foreign filmmaking expeditions and location work.

Pioneering Rocket Photography

Shortly after completing the expedition to Panama, Gills was sent to Hollywood on temporary duty to procure skilled technical personnel and various photographic equipment for the U. S. Navy photographic units. It was during this period that he was requested to do one film project dealing with the testing of barrage rocket launches from small landing craft.

16mm. Kodachrome Used Exclusively

Commander Gills, in surveying the problem of photographing the fast-flying rockets, decided that only 16mm. equipment and kodachrome film would be suitable. A large number of important factors dictated this decision. Firstly, the 35mm. cameras were too cumbersome to handle in photographing a speeding rocket projectile—while the cameramen became so expert with the small and lightweight 16mm. cameras that they seldom missed following the rocket and keeping it in the frame, despite the necessary necessity in following what was little more than a fleeting speck in the sky.

Under the great pressure of wartime development, rocket tests were run off regardless of weather conditions. Color film was essential, as—with black-and-white negative to photograph against a hazy, gray or dirty sky—the color of smoke emitted, color of the flame, and the length of time of burning of the propellant could not be accurately registered on the film. With monochrome negative in bad weather, the smoke and flame would register the same as the background and make the film useless.

With kodachrome, the scientists doing the research were able to get data and information on color of the flame, color of smoke, length of burning time of the propellant—not only at the time of launching and during trajectory—but the same factors when the target was hit.

High Speed Camera

In the existing photography required to follow the rockets, normal speed photography was of no value, especially when it is realized that only a few seconds are consumed from the time of launching a rocket projectile until the latter hits the target.

Nearly percent of the photographing on the program was done with high speed cameras burning up at 44 frames per second Standard 16mm. cameras—EK Cine Special, Bell & Howell, etc.—were used; and hundreds of thousands of feet of film were whipped through with virtually no camera difficulties.

On occasion, cameras rolling up speed of 128 frames per second were employed, particularly on ground tests of experimental firing of the higher-powered rockets from airplane wings. This film



Commander A. L. Gills, A.S.C.

detail was particularly desired by the researching scientists for study of high-frequency shock waves on the plane structure.

Pioneering Rocket Weapons

The group of scientists charged with testing and development of the rocket weapons started virtually from scratch, insofar as adapting powder for use as propellants, where exacting characteristics of uniform burning were absolutely essential. General characteristics and burning properties of powder were felicitously well defined scientifically, but the adaptability for rocket missiles was an entirely new field. When it is realized that the propellant powder at takeoff from the launching device burns within the space of two seconds, and the particular point required accurate and careful study by the researching scientists

because of the major importance of the launching period; the contribution of high speed color motion pictures can be appreciated.

Through ability to study and measure the motion picture frames later, instead of depending on eyes catching details of the propellant burning, the scientists were able to materially increase the perfection of various types of rocket weapons during progress of the program. Operations of experimental rockets in flight during testing, as registered on the film, indicated correction in design. The research engineers on accurate osculocams, were enabled—through film—to study the action and characteristics of the rocket and propellant down to within 1/300th of a second. It might

(Continued on Page 88)

The Fluid Camera

By HERB A. LIGHTMAN

BACK in the days when the motion picture industry was young and cameras were cranked by hand, the term *fluid camera* had not yet been added to the film-maker's lexicon. In those days the camera was clamped in place and, except for an occasional short tilt or pan, it remained a static observer of the action that took place before it. Camera movement was all but unknown. Instead, the action was so directed as to fit within the bounds of the static frame, and when the action became too wide for the frame the director cut to another angle.

Later, when western films of the "Let's head 'em off at th'punch!" variety became popular, the camera was mounted on a truck and went bouncing over the landscape preceding the chase. This was the beginning of camera movement as it has developed in our present-day photography. But it remained for David Wark Griffith, pioneer of so many of our modern cinema techniques, to introduce camera movement as a definite dramatic device in motion picture making.

The film industry has come a long way since the days of "Birds of a Nation"

Hollywood cinematographers have developed motion picture photography into one of the highest forms of artistic expression. The camera is no longer a static, inhibited machine. It is now a *fluid force*—a device that not only records action, but by its own movement about the sound stage, adds dramatic emphasis and "punch" to the film narrative.

The theory behind the fluid camera is a simple one. The camera is the "eye" of the audience, and the spectator sees only as much of the action as the camera sees. But if the spectator were actually present in the situation depicted upon the screen, he would not just stand in one place and restrain his eye from moving about in an effort to follow the action. Rather, he would move around—drawing closer to view this or that bit of action, drawing back to get a better view of the overall situation. The camera, as his cinematic eye, has a right to follow the same course of movement—drawing in, pulling back, swooping down to some significant segment of the scene. It is so natural for the camera to move as it is for a character in the scene to move about the set.

A sound psychology underlies the use of the mobile camera. Movement purely for the sake of movement is an abuse of an otherwise powerful technique. The intelligent director or cinematographer moves the camera only when the demands of the filmic situation motivate that movement. Correctly used, the mobile camera produces a fluid continuity—a smoothly-flowing interplay of changing compositions within the individual scene. These compositions change and vary from extreme long shots to extreme close-ups without the harshness of a direct cut. Thus the audience's attention is held without mechanical interruption to the subject-matter of the scene.

There are several types of camera movement, and each device has come to be known by a specific name. The *follow* shot is one of the most common techniques and, as the name implies, it is used to follow the action of one or more characters within the scene. Usually this is accomplished by a simple tilt or pan or a combination of the two. Frequently, however, it becomes necessary for the camera to follow a player over a wide stretch of terrain. When this is the case, the camera is mounted on a dolly or camera boom and we have what is known



Setting an overhead rigging. Director of Photography Leon Shamroy, A. S. C., directly behind camera on dolly unit, making final checkup for scene of Betty Grable in "The Smoking Mrs. Murphy," a 20th-Fox production.

[Continued on Page 103]

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HOLLYWOOD

A Positive Vari-Focal View Finder For Motion Picture Cameras

By FRANK G. BACK

The author, Frank G. Back, M. E., Sc. D., is associated with the Research and Development Laboratory, New York.

Presented at recent Technical Conference of Society of Motion Picture Engineers and published in December, 1945 issue of *SMPE Journal*. Reprinted by special permission.

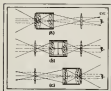


Fig. 1

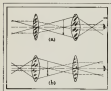


Fig. 2

A new positive vari-focal view-finder for motion picture cameras eliminates the disadvantages of the two classes of finders now in use. The new view-finder uses only positive elements, thereby producing an upright real image. And it is possible to secure this real image in a frame of constant size. The image becomes variable over a wide range along a smooth and continuous curve instead of by intermittent steps as in the case in some other types of finders.

The two classes of finders presently used secure images by two different methods. One limits the fields of different camera lenses by mechanically changing the size of the frame which surrounds the image. The second class changes the field by optical means.

In the first class, we see that the image frame gets smaller as the focal length of the camera objective increases. The disadvantages of this are apparent. Those finders of the second class which change the field optically do one of two things: they change the frame size, as in the first class, or they produce only virtual images which do not frame distinctly. Negative-type finders, as described, also have large parallax error. This is particularly true when the eye is displaced. One other type of view-finder having a turnhead might be mentioned here. Its evident disadvantage lies in the limitations placed upon it by the number of optical elements in its turnhead.

The vari-focal system of the new positive view-finder is based, of course, on the principle of the astronomical telescope. The finder adds to this principle certain other features which give it decided advantages. In the astronomical

telescope, magnification is determined by the ratio of the focal length of the front lens combination to the focal length of the rear-lens combination.

Thus, a long focus front lens combined with a short focus rear lens gives us magnification. Fig. 1 (a) illustrates this clearly. Conversely, a short focus front lens coupled with a long focus rear lens brings about reduction, as seen in Fig. 1 (b).

The new positive view-finder uses a front lens and a rear lens of approximately equal focal length. The front and rear lenses do not move and are known as "stationary lenses." The variation is obtained by two lenses of shorter focal length mounted in a barrel with the view-finder housing between the two stationary lenses. These two shorter focus or "variator lenses" can be moved forward and backward from the front stationary lens to the rear lens. The movable barrel in which they are mounted is called the "variator."

This is how the variator operates: The stationary, and variator lenses are computed in such a way that when the variator is in the extreme front position, the combined power of the stationary front lens and the first variator lens is such that the inverted real image produced by them falls on the second variator lens. Fig. 2 (a) shows this. Thus the second variator lens acts as a field lens in this position and does not participate in the forming of the image. So far, the vari-focal system acts as a telescope that has a short focus objective and a longer focus rear lens, producing a reduced image covering a wide-field angle, as with a wide-angle lens.

(Continued on Page 181)

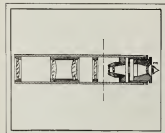


Fig. 3

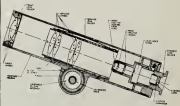


Fig. 4

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ACES of the CAMERA

Paul Eagler, A. S. C.

By W. G. C. BOSCO

KISMET, as the sage said, or should have said even if he didn't, is a wonderful thing. Who would have thought Crummett, that because tailors once used a rubberized adhesive tape to hold up the cuffs on men's trousers, that it would have an influence either directly or indirectly on the future of the film industry. And yet, so intricately are the doors of fortune woven, that such was the case.

You see, the subject of our little biography this month, Paul Eagler, A.S.C., had a father who was a tailor; and in

the year 1900 he not only gave Paul a magnificent magic lantern, he also brought him home the paper strips in which the above mentioned rubberized tape came wrapped.

Now the paper from this tape was, oddly enough, about 15mm. in width and came wound on spools in lengths of approximately 100 feet. And young Paul, who cured very quickly of the static quality of his magic lantern pictures, found out that he could simulate movement by raising progressive pictures on this paper tape and jerking it through

his magic lantern. The results, also, were not what you might call completely satisfactory, but Paul was very young at the time, easily pleased, and so contentedly happy over the results that it provided an avenue for his youthful inventiveness and subsequently influenced his choice of a career. And so we feel that we have proven, even though laboriously, the proposition set forth in the first paragraph; because while there may be some who would be loathe to admit that the special effects men are the backbone of the industry, there must be few who will deny that they form a most important vertebra. Particularly is this true of men like Paul Eagler, who, in growing up with the industry, have contributed so much to its spectacular technical achievements.

Soon after Paul's original attempt at movie-making a traveling show came to the small town of Newman, Illinois, where he was born and living at the time. It was typical of the shows that played to hinterland audiences at the turn of the century. There were vaudeville acts, song-slides, and during the intermissions, real, genuine two-minute movies.

To Paul the movies were inspirational, and as his youthful eyes marveled all the superlatives claimed for them in the lurid advertising. He made up his mind to find out what was in that portable asbestos booth. All he could get was a look, but he decided that the projector was a magic-lantern with some sort of hand-cranked clockwork. That was when the good people of Newman began to hide their clocks, and Paul's original magic-lantern underwent numerous drastic remodelings.

When the traveling show came back to the Newman Opera House the manager—theater-projectionist couldn't get rid of Paul. So he bowed to the inevitable and let the young enthusiast crank the projector.

Thus, at the age of eleven, he made his debut as a projectionist. He was told that when he came to the finale, 25 feet of hand-tinted American flag floating proudly in the breeze, he must crank through, then crank it back, and then crank it back again; making seventy-five feet of film in all, and securing a thunderous applause for the finish. That this feat could be accomplished seemed impossible to Paul. But the projectionist quickly reassured him: "A flag floating in the breeze," he said, "is a flag floating in the breeze. No matter which way you crank it." And sure enough, Paul found that the man was right. It was his first intimation of what could be perpetrated on a gullible public with the aid of a camera and a projector.

By 1905 Paul was a showman in his own right, with what was perhaps one of the first store-shows in the State of Illinois. The occasion was a lumpy, 4th of July celebration which the citizens of Newman made to last three days; and the vehicle our youthful impressionist used to gather in the nickels from his fellow

[Continued on Page 196]



**film threading time . . .
27 seconds**

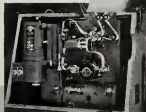
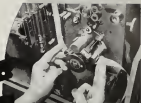
THANKS TO VICTOR'S GREATER FINGER ROOM

Over the sound drum . . . under the large sprocket . . . into the easily accessible film channel—these are the simple highlights of threading a Victor. Yes, fingers—young and old—quickly learn this easy lesson. The reason is . . . simplicity . . . more finger room.

Such exclusive Victor features as 180 degree Swing-Out Lens Mount, Duo-Flex Pawls, Sprocket-Lamp House, and Safety Film Traps give greatest protection to valuable films. Both new and experienced operators prefer this extra security and trouble-free operation. Yes, your films are safer—as well as being brilliantly projected—with a Victor.



Check this Victor Oversize Speaker. Note the greater film surface . . . five teeth engage the film (instead of three as in ordinary projection).



The
ANIMATOPHONE
16mm Sound
Projector

VICTOR ANIMATOPHONOGRAPH CORPORATION

Home Office and Factory: Des Moines, Iowa

New York 110 Madison Hill Building, 100 West 42nd Street • Chicago 111 100 West Randolph

MAKERS OF 16MM SOUND FILMS SINCE 1921

Filming Rockets

(Continued from Page 8)

be pointed out, in order to provide true information, the dial of the camera's stopwatch was registered at the end of each high speed shot to provide the scientists with exact timing when the film was studied in detail.

Many Rocket Weapons Developed

The scientists and photographic unit were concerned with many types of rocket weapons under development for various uses in offensive campaigns. Each development followed a set procedure and program. Initial test was on the ground from a stationary launching site, with missile aimed at target area 1,500 to 2,000 yards distant. Although the scientists and military observers were stationed behind concrete shields a safe distance of one-half mile from the range, it was necessary for members of the camera crew to get within 500 yards—operating in the open with long focal length lenses of four and six inches. General procedure was to set one cameraman directly opposite the launching site, a second mid-distant between the launcher and target area, and the third opposite the intended target area.

With the rocket projectiles travelling anywhere from 600 to 1,500 feet per second, the cameramen could not see targets, but each pointed the entire line of sight with hand-held cameras. The men became so expert in the work that they seldom missed following throughout the trajectory from the time of launching till target was struck; thereby gaining invaluable ballistic data.

In the early stages of experiments with new rockets, higher-powered propellant powders, and fuses, both the scientists and cameramen were placed in most hazardous and dangerous situations. They had to be alert for anything to happen. Premature detonation of experimental fuses would shatter hot and jagged fragments of steel in all directions, and on one occasion, the magazine was knocked off a carrier by flying steel. Mindless escapes were the rule rather than the exception.

Stressing Safety Factors

Safety of the operators of the missile launchers, either from amphibious craft or airplanes, was of major importance in the tests and developments. After the initial ground tests, a stationary plane wing was set up with launching bracket attached. Exhaustive tests were then made to study—through the films—the stress and strain of the launching shock when the rocket was sent on its way. After insuring stability of the plane wing, next step was launching from a regular plane placed on a wooden ramp with tail lifted into flying position; motor turned over at normal speed; without pilot or mechanic aboard; and rocket fired via remote control. At this point, three cameras—focusing at normal, 64 pictures per second and 128 pictures per second—were employed. Resulting film provided the scientists with details

on the blast effect and shock waves of the projected rocket on a plane in flight.

Final Tests from Plane

After assurance of the uniformity of a particular type rocket in performance, final tests in firing from a plane in flight were instituted. Camera photographed launchings from an accompanying plane 10,000 feet in the air—generally over a desert range. This provided further information for the scientists before green light was given for final tests where the rocket-launching plane flew in at low levels at indicated ground targets.

Virtually the same procedure was followed in all phases of rocket development, which covered also launchings from the ground, surface craft, submarines, etc. Many types were developed and designed for special purposes.

Films to Chiefs of Staff

When the specific rocket and launching device for either air, ground, or sea use was felt ready, a concise film on the type was edited to show pertinent points in the development, handling, and effectiveness of the final tests. These films, on account of the urgency and need of rocket weapons in warfare, told the entire story with a minimum of titles. Time was not wasted on recording a descriptive dialogue soundtrack, so each a procedure would consume next valuable time through extra processing.

Each film, as completed, was sent to Washington for viewing, and the visual reports on intimate phases of the action and performance of each particular rocket missile vitally speeded up adoption and utilization in the field. Prints of each subject were then sent (as top secret material) to air, ground, naval and other forces for viewing by commands to ascertain adaptability in their individual campaigns.

From these short and concise films on each specific rocket development, officers and commands charged with making decisions in the field were able to better evaluate the combat and military value of the weapon depicted than through the previous procedure of providing them with long and lengthy written reports which previously had been highly technical and consumed much time of the top command to read and evaluate. The visual reports were far easier for military strategists to evaluate for combat use, with consequential speedier metallation in warfare.

By August, 1944, total of 77 reels on rocket weapons and projectiles made by Commander Gilks and his camera unit, were in the library of National Development Research Council for lease to Navy, Army, and Marine strategists and officers. The subjects, in addition, served as most valuable training and instructional films for officers and personnel on each type of rocket weapon in the early introduction of the latter on various battle fronts before specific training films of handling and operation could be turned out. In numerous cases, the test and development film subjects served

for training and indoctrination of officers and men of the armed services.

Commendation on Film Project

As the photographic accomplishments of Commander Gilks and his small but compact crew progressed on the rocket program experiments and developments, the unit received continual commendation for its results and the initiative and inventiveness in overcoming seemingly impossible obstacles in achieving seemingly impossible photography in a most vital war program.

E. C. Watson, official investigator of National Development Research Council at Caltech, completely summarized the entire film program on rocket projects with a report to Washington which stated:

"Such films are of particular value during the early stages of the development of a new weapon when its tactical uses and its characteristics are still being explored, and when so nucleus of personnel familiar with the weapon is available.

"The films are used constantly to acquaint visiting scientists, and Army and Navy officers, with the nature of these new developments. They also resulted in a great saving of time and expense to us and to our increasing number of military visitors, as it was unnecessary to stage special demonstrations for them with consequent loss of time.

"The films are of definite scientific and technical value, being particularly useful in study of blast effects on launchers and of launchers reactions, in fuse, fragmentation and explosion tests, and in tests of flash effects."

Later, Watson advised General Donovan: "Filming of field and range tests, are not only valuable in the research and development work itself, but of especial value in bringing about the acceptance of rockets by the fighting services, in getting them into combat use promptly, and in training military personnel in their use."

Special commendation in 1945 was issued by the Chief of Naval Operations for "the valuable color film made by the photographic unit under Commander Gilks." A State Department representative wrote Commander Gilks, "I know only too well what incredible results you have obtained in filming rocket projectiles."

Praise for Unit

Commander Gilks, in disclosing the film activities in the rocket projectile program during the war, lays particular stress on the success of the assignment to the members of his unit. He mentions the late Jack MacKenzie, Jr., chief photographer; mate; the late Edwin Beach, photographer; mate both of whom were killed last year in an auto accident returning from a particularly dangerous flying mission; and photographer, first class, Herb Wolf, who was injured in the same crash. He also points out the important contributions in the project of chief photographer,

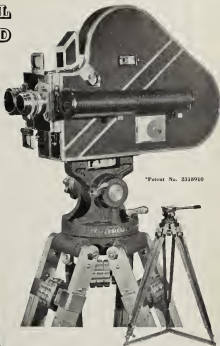
(Continued on Page 131)

"PROFESSIONAL JUNIOR" * TRIPOD

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Now Available!

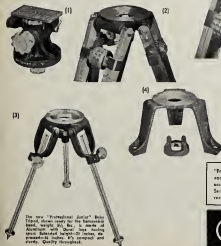
Acclaimed the finest for every picture taking use.



*Patent No. 2318910

The friction type head which is unconditionally guaranteed for 5 years, gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor or Baby "Professional Junior" Tripod base. The large pin and friction assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and 8 & H Eyemo (with motor), and with or without alignment gauge.

The standard size tripod base is sturdy, "Speed-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg speed, 42". Extended height 72". All workmanship and materials are the finest.



Adaptability: here are illustrated (1) the friction type removable "Professional Junior" tripod head that may be affixed to (2) the Standard Tripod Legs Base and (3) the new all-metal "Baby" tripod and (4) the "Hi-Hat" by simply fastening the finger-grip head fastening and that is shown under it. Note the positive-locking, ruled, height-adjustment knobs and tie-down rings of the Standard Tripod Base which is standing on a Triangle.

Now Available to Camera Owners and Dealers

"Professional Junior" Tripods, Baby Tripods, Developing Kits, "Hi-Hat" and Stillmore Alignment Gauge made by Camera Equipment Co. are used by the U. S. Navy, Army Air Force, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading National companies and 16mm. and 35mm. motion picture producers.

FRANK O. ZUCKER
CAMERA EQUIPMENT CO.
 1600 BROADWAY NEW YORK CITY

The new "Professional Junior" Baby Tripod, shown ready for the Hi-Hat head, weighs 9 1/2 lbs. It is made of Aluminum with Dural legs having special balanced length—20 inches, the standard 14 inches. It's compact and sturdy. Quality throughout.

Solar Aircraft Acquires Fonda Machinery Co.

Patent and manufacturing rights on film processing equipment and developing machines previously turned out by Fonda Machinery Co., has been acquired by Solar Aircraft Company. The latter, which produced highly-precision parts and accessories for airplanes during the war, has factory space, skilled mechanics and toolmakers, and necessary machinery to greatly increase the output of Fonda film developing equipment.

Fonda Film Processing Equipment Division of Solar Aircraft Company has been set up, with sales and display headquarters at the former Fonda plant, 8466 Santa Monica Blvd., Los Angeles.

John F. Van Lierden, original designer of Fonda developing machines, continues with the new company; while John Tuve continues as production man-

ager of Fonda equipment for Solar. Clayton Wall, formerly with the Army Air Forces at Wright Field, is designing engineer.

William Frager, associated with the AAF photographic division during the war, becomes sales manager of the Fonda division of Solar. Frager is widely known in the film industry.

Acquisition by Solar eliminates the production bottleneck of Fonda, which was forced to limit output because of restricted manufacturing facilities. New deal provides factors for volume production of the Fonda developing machines to meet the widespread demand from all parts of the world. Fonda equipment allows for processing of both 35 and 16mm film.

Wall Sound Cameras Again Available

Widely recognized as "the most successful news reel camera", the Wall 35mm sound camera, manufactured by St. George Recording Equipment Corp. of New York, won new laurels during the war when eighty of these sound cameras were constantly in use by the Army and Navy without a single unsatisfactory report. Compact, light in weight and sturdy, these cameras proved easy to handle under the most difficult conditions of desert and jungle fighting and "stepped up" under long, strenuous service. The Wall sound camera has been used for Fox Movietone films since 1928. The entire Wall outfit weighs only 37 pounds and is simple to operate. One man can easily operate both sound recording and photography. The sound system is battery operated.

The Wall camera can be used for regular studio photography, without sound, when desired. It is free from "shrapnel". Bausch & Lomb Bellar lenses are used. These have proved superior to any foreign lenses.

St. George Recording Equipment Corp. announces that it has a limited number of these Wall 35mm sound cameras available for immediate shipment. Each outfit comprises the following:

Wall camera-sound system sound—complete with Bausch & Lomb Bellar 50mm f 2.3 coated lenses, Bausch & Lomb Bellar 18mm f 2.3 coated lens, Bausch & Lomb Bellar 100mm f 2.3 coated lens, Bausch & Lomb Bellar 180mm f 2.7 coated lens, modular galvanometer, camera case—carrying, camera accessory carrying case—consisting of 1 matte box, Bausch & Lomb Bellar 35mm f 2.3 coated lens, magazine belt tightener, six collapsible film spools, five battery film centers, 1000-ft. and one 400-ft. magazine loading hooks, filter holder container with spare double and

three single filter holders. Oil can, four pieces, screwdriver, bottle of camera lubricating oil—good for 80 below zero; tripod (pat) handle, crank handle, three camera belts—small, medium, large, amplifier, amplifier carrying case, amplifier accessory carrying case, consisting of two camera power cables, two 50-ft. microphone extension cable, two galvanometer cables, two amplifier power cables, two sets of earphones, four extender lamps, two microphones with cable, goose-neck and baffle, two microphone tripods, camera portable power pack shoulder carrying strap with six non-spillable storage batteries and 3-4 volt, 2-6 volt, 1-12 volt outlets, vibrator pack with six non-spillable storage batteries, magazine carrying case with two 1000-ft. magazines, baby tripod with carrying case and light, tripod with freshend and beat and saddle, triangle and magazine carrying case with four 400-ft. magazines.

Telefilm Constructing Film Storage Vaults

Telefilm Studios of Hollywood has under construction a large air-conditioned, steel-reinforced concrete vault for film storage. In addition to providing space for the increasing number of 16mm negatives of Telefilm product, the vaults will be made available for storage of films for other commercial and industrial producers in the industry.

"It's All Yours," by Steiner

William Steiner, A. S. C., recently completed photography on a ten-minute short, "It's All Yours," at the Willard Studios in New York. Best, narrated by Ralph Bellamy, is designed to promote anti-curricular reading by high school students.

Best 1945 Cinematography

(Continued from Page 79)

Academy Award jointly with Ray Benson, A.S.C. previously for "Gone With the Wind."

George Barnes, who has nominations in both classes with Selznick's "Spellbound" in the black-and-white, and RKO's "The Spanish Main" in color, also previously won an Academy Award for photographic direction on "Rebecca." Tony Gaudio, in the color nominations this year with Columbia's "Going to Be a Soldier," was a previous Academy Award winner in cinematography for his splendid photographic work on Warner's "Anthony Adverse."

Final Selections

Selection of the photographic achievement to be designated for the Academy Award in Cinematography is made through vote of the Directors of Cinematography for one of the five nominated productions in both the black-and-white and color divisions. The production receiving the highest number of votes is adjudged the winner, with the Director of Photography individually responsible for the photography receiving the Academy Oscar, which is considered the highest recognition of motion picture photographic achievement for the year.

Recognition for Special Effects

Although the spotlight is on the directors of photography for their motion picture cinematography in the Academy Awards, the recognition of Special Effects for an Oscar cannot be discounted. The wizardry of the personae and special effects photographers, who provide realistic illusions for the finished pictures which could be attained through no other means.

Because of the complexities of analyzing the final results of special effects photography, the Academy President appoints a committee of 15 technicians who are familiar with the intricacies of special effects photography in releases of the year. Final consideration narrows down to five productions, with committee making selection of the recipient of the Oscar winner from this quartette.

Basic requirements for judging of Special Effect achievements are:

Unusually necessary of the effects, pictorial or sound, or both to the picture.

Economic necessity in the picture; it should be physically or economically impossible to produce the picture without the effects.

Illusion of actual reality should be accomplished with such skill that the mechanism by which the effect is achieved is not apparent in the final result.

Echols Resigns From Anso

G. Harrison Echols has resigned as general manager of the Anso division of General Aniline and Film Corp., position he has held for the past three years.

Announcing the New
BARDWELL & McALISTER
BOOM
LIGHT

Specifications:

Height of standard

—Minimum 5'5"
 —Maximum 5'9"

Total reach of boom

—Standard extended at 45° angle, 12'9" from floor, standard retracted, 9'9" from floor. Standard to light—4'3". Maximum reach—6 feet. Maximum reach of boom when in balance—extended, 14'2", retracted, 11 feet

Focusing

—4° spot to 44° flood

Lights

—Special sockets for process lighting, use 500 watt T-33 or 750 watt T-24, C-13 (element medium light) glass, available when in 3200° K for color photography, or type MP for black and white

Wheels

—Heavy 3 inch rubber tired ball bearing casters for step-less shifting

The new Bardwell and McAlister BOOM Light is here. This is the latest addition to the famous B & M line of photographic lighting equipment....all made in Hollywood.

This new Boom Light has been designed to eliminate undesirable features of other types now in use and give improved performance. As an example, the cross arm may be tilted to any angle without adjusting the thumbcrew at the balance point as shown at #2 in the illustration. A thrust bearing with a fibre friction disc holds the boom motionless in any desired position. The standard does not need to be lowered at any time for this purpose. This feature alone saves hours of valuable time and countless waste motions.

The legs of the standard (see #3) are so designed that other equipment may be stacked close to it.

The Baby Keg-Lite with which this boom comes equipped, is also so bracketted (#1) that it maintains a constant angle of adjustment in all positions of the boom up to 45° from vertical.

This and other features listed at left, makes the B & M Boom Light the answer to the demands of the ace cameramen of Hollywood and professional photographers everywhere.

Place your order now for early delivery.

PHOTOGRAPHIC LIGHTING EQUIPMENT

Bardwell & McAlister, Inc., manufactures a complete line of optically correct photographic lighting equipment. Write for free literature on the Sonora (5000 watt spot), the Junior (1000-2000), the Baby Keg-Lite (500 to 750 watts) and the Dinky-Lite (100 to 150) the Single and Double Bounce, and Accessories. Address Dept. AC



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Box 1310 • Hollywood 28 • California



AMONG THE MOVIE CLUBS

Brooklyn Amateur Cine Club

Charles Benjamin has been elected vice president of Brooklyn Amateur Cine Club, and Eugene E. Adams secretary—both stepping in to fill vacancies among the officer roster.

Meeting on February 6th at the Hotel Belmont featured one of the club's "grad night" film program included the first of the Harmon Foundation films, "How To Make Better Movies." Showing was accompanied with a discussion by the technical committee on various phases of film making.

Eight millimeter division was featured at meeting on February 10th, with J. F. Hollywood of New York 8 mm. Club, presenting the program of color subjects

Tri-City Cinema Club

Nearly 100 were present at the January 16th meeting of Tri-City (Davenport, Rock Island, Moline) Cinema Club, held in auditorium of Iowa-Illinois Gas and Electric, Rock Island. After a short business session, film program included exhibition of "Flowers" (16mm.), by Marvin Russell of Rock Island, and "Autumn and Spring" (16mm.), by Miss Georgia First of Rock Island. Paul DeGraff, Iowa representative for Anco, delivered a symposium on movie films, including "grooming of black and white film—illustrated with slides; and a description of Anco Color, which was accompanied by both a reel of 16mm. and slides.

February 22nd meeting was held at the Davenport Municipal Art Gallery, and film program featured "Iowa Trails," by Mr. Lytle.

L. A. Cinema Club

Proposal to change the name of Los Angeles Cinema Club to Hollywood Cinema Club consumed major time of business session of meeting of Feb. 4th held at the Wilshire Ethel Club. Vote on the question resulted in a tie, 69 to 69, of the members present, and it was then moved that mail ballot of all members in good standing be taken. Deadline for the mail voting has been set for March 1st, and outcome will be announced at the March meeting.

In addition to showings of prize winning films is the recent club contest, members viewed series of Kodachrome slides by Dr. E. Louis Kerner.

Sound Projector Demonstrations Set by L.A. Cinema Club

During the next several months, the Los Angeles Cinema Club program committee is arranging to have demonstrations at meetings of the latest models of the post-war 16mm. sound projectors. Idea, advanced by Secretary Jack Shandley, and okayed by the board of directors, is to invite the manufacturers or local distributors of the standard and recognized projectors to demonstrate their machines at monthly club meetings; each projector to hold the stage on a specific meeting night for the running off of two to four reels of sound film.

In this manner, the large number of members interested in purchasing 16mm. sound projectors when the latter are available, will be enabled to obtain a comparative demonstration of each under uniform conditions in the same room. Procedure will also eliminate the loss of time of members in visiting various dealer showrooms for individual demonstrations.

The idea is one which can be easily and readily adopted by other amateur movie clubs throughout the country, especially in those instances where a large number of members are interested in obtaining demonstrations of the new equipment which will be on the market shortly whereby advance reservation orders are not necessary.

The Los Angeles Cinema Club has already contacted two distributors of standard 16mm. sound projectors, and have received enthusiastic assurances of cooperation in the plan. It is expected the others will be lined up within the next month to participate.

Los Angeles Eight

Los Angeles 8mm. Club held regular meeting on February 19th in the Bell & Howell auditorium, with a talk on "The Technique of Movie Making" headlining the evening, after which several additional entries in the annual contest were exhibited. Club has sent out a special questionnaire to all members, asking for listing of various equipment owned, and for survey of membership interests in the monthly programs.

Public Address System by De Vry

De Vry Corporation of Chicago, has designed and is currently manufacturing four position mixer unit public address systems. With four inputs, four microphones or a record turntable and three mikes may be used.

La Casa Club

Regular monthly meeting of La Casa Movie Club of Alhambra, Calif., was held February 18th in Y. M. C. A. auditorium, with John H. Gray as chairman of the evening. Interesting film program included "How to Ski," by John K. Northrop, member of the Los Angeles 8mm. Club, and "Western Canada," a 16mm subject by C. H. Thomson. The 16mm. kodachrome documentary, "Eighteenth Century Life in Williamsburg, Virginia," presented by Eastman Kodak Co., was repeated by request of many members.

New York Eight

Ernie Krenner's "Southern Exposures," and Richard Elms' "Nautucket Turnabout" featured the film program of the January 31st meeting of New York City 8 mm. Club, held at the Hotel Pennsylvania.



Interesting action camera shot at Hollywood Park beachfront for scene in Metro-Goldwyn-Mayer's "We Went to the Races". In studio area, James Cagney and Ann Corbett are ready to make a scene, with Charles Adams Jr., A. I. C. handling direction of photography.

Forecast for '46...



**CINÉ-KODAK
MAGAZINE 8**

Three-second loading with interchangeable Kodachrome or Panchromatic film magazines, $\frac{1}{16}$ lens interchangeable with an accessory lens, including a wide-angle lens and ranging out to a five-times telephoto, enclosed direct-view finder serves all lenses, four operating speeds including slow motion, unique footage-indicator control "doublets" as magazine release when changing film, pulsing button for gauging scene length, attached Universal Guide for all Ciné-Kodak Film.



**CINÉ-KODAK
MAGAZINE 16**

Ship-on interchangeable loading with any of four Ciné-Kodak full-color or black-and-white films, $\frac{1}{16}$ lens interchangeable with an accessory lens ranging from a wide-angle to a six-times telephoto, full-view eye-level finder serves all available lenses, three operating speeds, including slow motion, automatic motor shut-off, pulsing button for judging scene length, magazine footage indicator shows unused film whether magazine is in or out of camera, attached Ciné-Kodak Universal Guide.



**CINÉ-KODAK
EIGHT-25**

Roll loading—takes the same famous Ciné-Kodak Film provided for the "Magazine 8," plus low-cost Ciné-Kodak Eight "Pan" Film, has fixed-focus $\frac{1}{25}$ lens, secured winding key, locking position for exposure button so movie meter can get into the picture, full-view eye-level finder combined with carrying handle, automatic footage indicator, Ciné-Kodak Universal Guide serving all Ciné-Kodak Film, combines all practical economy of equipment and operation with top dependability.



**CINÉ-KODAK
SPECIAL**

The one "amateur standard" movie camera acclaimed by engineers, biologists, physicians, doctors, athletes, coaches, makers of industrial, advertising, and training films—and all other advanced workers in 16mm. movies—as adequate for the filming problems they must overcome and for the professional effects they desire. No first camera for the newcomer—yet definitely the ultimate camera for those seeking easy mastery of 16mm. movies at their very best.

Ciné-Kodaks and Kodascopes are on the way

ONLY a very few—right now. Then, more and more in the weeks and months to come... economy "Eights"... versatile, easy-to-operate Magazine Ciné-Kodaks—both 8mm. and 16mm.—the most popular movie cameras in the world, regardless of price... and that finest of all 16mm. cameras, Ciné-Kodak Special. Kodascopes will return by the same schedule... 8mm. silent projectors... 16mm.

projectors, both silent and sound.

See your Ciné-Kodak dealer—soon—about your latest Ciné-Kodak. And while you're there, stock up on Ciné-Kodak Film... full-color Kodachrome or brilliant black-and-white. He should have all you want—just in time for your spring movie making... Eastman Kodak Company, Rochester 4, N. Y.

Kodak

TITLES OF DISTINCTION

By JAMES R. OSWALD



TITLE making is fast becoming a source of enjoyment for the revere maker that rivals the actual taking of pictures itself. Discriminating amateurs, no longer content with the routine shooting of title cards "straight," are constantly alert to new ways of lifting their titles out of the "ordinary" class. In this connection, much is to be gained by watching closely the innumerable, clever effects of professionally made movies, next time you visit your local theater, with an eye towards incorporating some of these interesting innovations to your own movies.

True enough, one can hardly hope to compete with Hollywood in every respect, with its radiant talent, equipment, and resources, but it's surprising what can be done with limited equipment and a creative head!

In spite of the many unique tricks that are used to enhance professionally made titles, one of the most intriguing, in my opinion, is the superimposition, wherein the desired wording appears over an actual motion picture background. Other title styles come and go, but the superimposed version retains its popularity.

As many are already familiar, this requires that the film be double exposed. There are several ways of accomplishing this feat, professionally, including the use of the camera, the motion picture printer, and various applications thereof. Obviously, the novice has but one alternative.

The usual method for the amateur to make these superimpositions is by double exposing the film in the camera. It is customary to expose the background scene, after noting the footage guide, and wind the film back to the starting point of the scene in the darkroom, and then expose the title against a jet black background. It makes little difference whether the background scene or the

(Continued on Page 36)

Illustrated at left: (1) Interior of the light box, showing placing of the lamp socket and lamp. A rheostat can control the intensity of the 30 watt lamp for perfect focus. (2-4) Slides contain the film as given in any one of three directions—for complete or not interference by locating the proper hinge pin, and removing the two sets in use. (5-6) Side view, showing how the apparatus is used in conjunction with the regular title making equipment. (7) The transparent title card, a film negative, is "sandwiched" between two pieces of glass, one preferably an opal glass to diffuse the light. (8) The glass "sandwich" is then placed in position at the top of the light box, and slid to the bottom, where it will remain securely in place. (9) Here a title slotted, much has been cut from black paper, and mounted on a stiff card, for optical effects. (10) Wiping a card across the title field in various positions, with the camera running, gives wipe effects. Your own imagination is the limit.

Now Available for Immediate Delivery!

A Limited Number of

WALL 35MM SOUND CAMERAS

COMPLETE WITH AMPLIFIERS AND POWER SUPPLIES —
READY TO RECORD SOUND

PRICES

1 Wall Camera — Single System Sound

CAMERA—Complete \$5,410.00

- 1 Camera Case—Carrying
- 1 Camera Accessory Carrying Case—consisting of 1
mattress box
- 1 Magazine ball lightmeter
- 2 Colored film lights
- 4 Double film contacts
- 1 1000 and 1 400 Magazine loading book
- 1 Filter holder assembly with 1 double and 3 single
filter lenses
- 1 Oil can
- 1 Fan plug
- 1 Screwdriver
- 1 Bottle of camera lubricating oil—guaranteed for 30 hours
use
- 2 Camera balls—small medium large
- 1 Camera portable power pack double carrying strap
with 4 non-rechargeable storage batteries and 2 4-lead,
2 4-wire, 1 1/2 volt outlets

SET OF LENSES—Complete \$1,410.00

- 1 Speed & Lens Baller 10 mm f 2.2 coated lens
- 1 Speed & Lens Baller 15 mm f 2.2 coated lens
- 1 Speed & Lens Baller 20 mm f 2.2 coated lens
- 1 Speed & Lens Baller 25 mm f 2.2 coated lens
- 1 Speed & Lens Baller 35 mm f 2.2 coated lens

SOUND SYSTEM—Complete \$1,890.00

- 1 Modifying Galvanometer
- 1 Amplifier
- 1 Amplifier Carrying Case
- 2 Amplifier Accessory Carrying Cases
- 2 Camera power cables
- 2 50' microphone extension cables
- 2 Galvanometer Cables
- 4 6' speaker power cables
- 3 Sets of headphones
- 4 Earphone Lamps
- 2 Microphone with cable, galvanometer and battery
- 2 Microphone stands
- 1 Monitor Ear with 4 non-rechargeable storage batteries

TRIPOD—Complete \$400.00

- 1 Tripod (Inst) stands
- 1 Ground handle
- 1 Baby tripod with carrying case and 10' tilt
- 1 Tripod with bushrod and level and cord
- 2 Brackets
- 1—Magazine carrying case with 2 1000'
magazines

\$265.00

1—Magazine carrying case with 4 400'
magazines

\$164.00

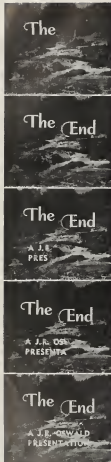
TOTAL PRICE \$9,990.00



Compact—light in weight—easy to handle—
incredibly precise—the WALL 35MM Sound
Camera meets the most exacting requirements
of the professional photographer. Comes com-
plete with tripod. ACT PROMPTLY to get one
of these outstanding Sound Cameras. The num-
ber now available is limited and will go quickly.

WIRE — PHONE — OR WRITE AIR MAIL TO

ST. GEORGE RECORDING EQUIPMENT CORP.
76 Varick St. New York 13, N. Y.



Titles of Distinction

(Continued from Page 14)

title is exposed first, but it is customary to slightly underexpose the picture part, to make the white letters stand out.

There is one objection to making this type of title in the manner just described, however, and one which has caused me to deviate from the customary practice. It is extremely difficult to light the title card in such a way that only the white letters register on the film, giving the finished product snappy contrast, with clear cut letters against a background in motion. My determination to perfect this type of title, which has always appealed to me was unyielding.

After considerable experimentation, and many disappointments and failures, I set out to find a new way to improve these superimpositions. To this end my efforts were rewarded when, having remembered reading of rear-illuminated titles, I decided to try lighting these titles from the rear.

Using transparent title cards, made by photographing the original title card first with a still camera, to obtain a film negative, serves a purpose that is twofold: First, it provides the required opaque background to the white, transparent letters through which the light will shine; second, it enables the free use of black ink in the original design, which is much easier to work with than white.

While basically all that is required in addition to the regular title making apparatus to make these superimpositions is a small lamp bulb, a couple pieces of glass the size of the title field, and a few short lengths of Scotch tape, as a matter of convenience I rigged up the lamphouse part of an old enlarger as a combination lamp holder and title card holder, to which the titles are taped. Although this set-up served the purpose quite well, I saw further possibilities for rear-illuminated titles.

Gradually improving my methods for making superimpositions, the gadget illustrated with this article was designed to give added versatility and ease to the process. The pictures and captions are

self-explanatory, and require no detailed comment in order to grasp the steps involved. Though the outfit was constructed to specifications for use with my own particular camera and title making apparatus, such an accessory could easily be adapted to each individual case.

It should be mentioned that a rheostat can control the intensity of the 10 watt lamp in the light box, for perfect fades, while the hinges enable the box to pivot in any one of three directions, for swinging in or out titles, merely by inserting the proper hinge pin, and removing the two set in wax. Similarly, wiping a card across the title field in various fashions, with the camera running, gives wipe effects. Your own imagination is the limit.

Best of all, these superimposed titles are possible with the most inexpensive of home movie cameras. Once you've seen what can be done along these lines with your own equipment, you'll be convinced. Possibilities depend upon your own skill and inventiveness. That's why I say, for real superb titles, try rear-illumination!

Cinema Club of San Francisco

Regular monthly meeting of Cinema Club of San Francisco was held February 19th at Women's City Club. Vice President Larry Duggan presided and arranged a varied film program, including: "Breakfast in Bed," a comedy in kelschroon by Henry Herman of Westwood Movie Club; "The Best," by Col. M. T. Lewis; "Trip to the Lugging Country," combination kelschroon and black-and-white by Benjamin Nichols; "Ten Pretty Girls," a kelschroon from the film library; and "Fiftieth Anniversary Celebration of Nurses Training School, St. Helena Sanatorium," by Dr. T. J. Lyman.

Leon Gage is arranging a trip to an exclusive and unusual sanatorium where members may try their cameras on the flowers as subjects. Future meeting programs include showings of new equipment and accessories; demonstrations of the new Animo color film, and sound-on-reel apparatus.

Byron Opens New 16mm. Laboratory

New 16mm. laboratory, complete in every detail and equipped with the most modern film processing machines and equipment, has been opened by Byron, Inc., in Washington, D. C. Building, separate from the company's complete sound studio for 16mm. production, is the first in a series of post-war expansions planned by the Byron organization.

The new facilities, added space and equipment, will triple the printing capacity of the Byron laboratory, and assure continuous delivery of full-fidelity black-and-white and color current prints which has been featured by the firm for several years. And for the first time, Byron offers clients complete black-and-white processing through a

continuous-process developing machine.

LAYOUT was carefully planned for maximum efficiency—temperature is controlled, and all air is filtered to prevent dust damage. Space has been provided for several pieces of latest post-war equipment which is slated for delivery and installation within the next few months.

Byron, which provides studio production and sound facilities in addition to the laboratory, is keeping in step with the tremendous expansion of the use of motion pictures in the commercial and educational fields, and has extensive plans for future expansion in a long-range program.

Wiping a card across the title field in various fashions, with the camera running, gives wipe effects. Your own imagination is the limit.



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HYPAN FILM

THE DIFFUSION DISC

By IRVING BROWNING

There is more behind every motion picture than the layman can imagine or detect. In the old days, technical flaws, jumpy motion, blurred photography, were all taken in the movie fan's stride. Just to be able to see a moving picture was a marvel that far outweighed any criticism of its quality. Today, however, technical perfection is a definite requirement, and picking blemes seems to be the objective of some movie fans, but that is all to the good, because it keeps motion picture technical staffs toing the mark.

Since it is the privilege of the movie fan to seek out our errors and criticize them, it is for us to recognize and acknowledge technical methods that have become obsolete. This article on the Diffusion Disc lays more stress on its demerits than on its merits.

I, myself, have used the disc or its counterpart in the movie camera, still camera, and enlarger, but now it belongs to a long past era of photography. Even though it is not as widely used now as formerly it still appears in close-

ups so often that it seems like a liar in contrast to a sharp film. The point I want to make is, should a diffused negative be used, regardless of its purpose, which is detrimental to good eyes as well as poor eyes? My feeling is that there is no comparable point between its harm to the eyes and the aid it gives in photographing a difficult subject.

I know all the arguments for and against its use. I appreciate how much artistic effort a cameraman must sacrifice in order to cover up any facial defects in a close-up which make-up alone could not accomplish. I appreciate, too, how important it is for the producer to present his valuable wares in the best light to his buying public.

Much of the fault lies with the movie audience, who for a long time have put beauty in first place and performance second. For the sake of beauty we have the make-up department on one hand and photography on the other. When these two forces cannot accomplish a re-

sult of beauty by make-up and light, then the Diffusion Disc is brought into play. By disturbing the light rays the glare up the entire scene is got a diffused, close-up portrait. Thank goodness it appears only in close-ups.

Science has made great progress in developing aids to better vision. The screen also has developed in that direction. The use of a Diffusion Disc is like removing the glasses from one with good vision, and gives a comparable effect to those with poor vision.

I always consult my dictionary for exact definitions, and this time Webster defines "Diffuse" or "Diffused" as "to pour in different directions—to spread—to scatter." The use of a Diffusing Disc in front of the lens will scatter the light rays—spreading them in different directions or diffusing the view.

In the early 20's the diffused photograph and motion picture came into vogue. The screen, seeking a new approach to art, used this method of diffusion for artistic effect. The Diffusion



Examples of Diffusion disc technique popular on film produced in the early '20's. Left: Buster Keaton in "The General"; right: Adolphe Menjou in "Woman of Paris."

Duse wanted the art of painting, and at that time any imitation of an art was better than no art at all.

Edward J. Steichen, the dean of American still photographers, once told me a humorous story in connection with his first experience with diffused ("soft focus," as it was also called) photography.

"Many years ago," he said, "I was on a photographic assignment, making a series of exposures for a national magazine. In the midst of this it began to rain, and I hurriedly completed the scheduled photographs so that I could dash my assignment. On my return home I developed the films and found that the last negatives I had made during the rain were not sharp, but soft—as if my negatives were out of focus. The lens had become moist from the rain and the result was a 'blurred' effect."

"Because I did not relish the idea of going back to do three negatives over again, I printed and delivered them, together with the others, and made no mention or excuse for the 'blurred' pictures. I only hoped they would be accepted without comment."

"Some time later the art director of the same periodical telephoned me and I was offered another assignment. I went to his office to receive instructions, and after arrangements were made my client concluded enthusiastically: 'and please—give us that fine art effect which you had in some of the photographs on your last assignment.' With this I left, wondering what to do about the 'fine art effect'."

When Steichen got on the job, however, he confessed to the usual procedure. He set up his camera, adjusted the lens, shutter, hood, everything was ready. Then, at the last minute, as he put it, he "got on the lens." The shutter clicked and, lo and behold, out comes soft focus pictures—the art of Steichen's photographic masterpieces reproduced again!

Karl Struss many years ago designed the Struss Pictorial lens, a soft focus correction which he sold by the hundreds for still photography. Later he designed such a lens for movies.

Before the use of the Diffusion Disc many cameramen used crepe-de-chine—that transparent black silk cloth rightfully used for nobody's clothes. When it was used in front of the lens the thickness made slight diffusion, and double thickness made heavy diffusion; a small hole burned in the center of the cloth left the center sharp, while the rest of the picture was diffused. As the demand for clear, sharp pictures made itself felt, diffusion gradually disappeared. Now lenses are coated in order to throw off any scattering of light which tends both to diffuse and over-expose highlights.

Diffusion is as hard on the eyes as is out-of-focus film. Many people wear glasses to correct refractive vision, but the diffused picture again makes the image indistinct to them as well as to the person with good vision.



Another example of the diffusion disc. John Barryman in a starring production.

Do not confuse my disapproval of diffusion in the close-up as compared to fog scenes, mist, night effects or sequences which may be photographed with a disc or made soft through low key lighting. I am concerned with the diffusion scenes which appear like this: Long shot of a room—three people standing, talking. Semi-close-up, same scene. Close-up over shoulder of male to female—Diffusion Disc used. Close-up of male over female shoulder—scene is sharply photographed. Semi-close-up of male and female—slightly diffused. Close-up of female—heavily diffused. Close-up of male—very sharp. Semi-close-up of male and female—slightly diffused. Close-up of female—heavily diffused, and so on and so on.

Such procedure is hard on the eyes; the effect is like removing glasses from eyes that need them and then replacing them at intervals and continuing the procedure for some time. This is annoying and disconcerting and is the effect which the Diffusion creates when used as illustrated above.

In Lewis Jacob's book, "Rose of the American Film," he speaks of diffused photography as highly flattering to women because it softens features and eliminates signs of age. This may be true but it is also true that it is a sacrifice of good photography and detrimental to the eyes.

Recently I was engaged in the production of a film on the rehabilitation of the blind called, "Sight Unseen." This film, as many others I have made on the preservation of eyesight, has made me sight conscious, and that has been my reason for bringing the subject of

diffusion to the fore. I feel quite sure that if the diffusion sequences which I set from time to time were incorporated into one reel and shown to eye specialists, they would agree that it is as detrimental to the eyes as poor light and other harmful factors.

In the cameraman's art nothing compares to a good sharp picture, which is a blessing to the eyes as well as an artistic achievement. With the aid of correct eye illuminated the projector flicker, we improved our lighting equipment, we developed panchromatic films, the finest coated lenses, the best camera equipment, and excellent color processes. With all these advantages and legitimate elements we should leave the stage of imitation to the past, where it belongs.

"What do you say, Bud? Wanna buy a Diffusion Disc?"

Boom Forecast in Industrial Films

American industries, especially those manufacturing and marketing heavy machinery, are setting up substantial appropriations this year for the production and distribution of 15mm films to advertise and promote their products abroad. This information is disclosed by Joseph A. Thomas, president of Tele-Sim Studios of Hollywood. Among companies employing 15mm films for promotion of heavy machinery are: Cincinnati Milling Machine Co., Jones & Lamson of Springfield, Vt., Allen-Chalmers of Milwaukee, and Caterpillar Tractor Co., Thomas stated.

Monument Valley District in Two Filmsound Releases

The Monument Valley area is featured in two latest releases of Bell & Howell's Filmsound library. Both are in 16 mm kodachrome. LA Jack Breed produced the color-sound one reeler, "Navajo Sand Painting," while Joe Ott produced "American Antiquities." Latter begins at Mesa Verde, and then swings through the Navajo National Monument, Monument Valley, Rainbow Bridge, and other sections of the district.

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Current Assignments of A.S.C. Members

As this issue of American Cinematographer goes to press, A. S. C. Directors of Photography are assigned to the following feature productions currently shooting in the various Hollywood studios:

Columbia Studios

Joseph Walker, "The Al Jolson story" (Technicolor).
Henry Frolich, "The Devil's Mask," with Anita Louise and Jim Bannon.
Phil Thunauer, "One Life Too Many," with Leslie Brooks, George Macready and Forrest Tucker.

International Pictures

Milton Krasser, "The Dark Mirror," starring Olivia de Havilland, Lew Ayres, Thomas Mitchell.

Metrol-Goldwyn-Mayer

Charles Rosher, "Fiesta," (Technicolor).

Filmo Diplomat Again Available

Distribution to photographic dealers of Bell & Howell's postwar movie equipment is progressing smoothly. One of the first items to appear on dealers' shelves is the Filmo Diplomat, 16mm. silent motion picture projector.

Designed for the home movie market, the Diplomat possesses many exclusive Bell & Howell features. These improvements are claimed to add a professional quality to home movie projection.

A new cooling system permits the use of a 100-watt lamp in addition to the standard 500- and 750-watt lamps used previously. The 1000-watt lamp is primarily intended for showing movies in halls, clubs, etc. All lamps are pre-aligned and pre-focused to obtain maximum efficiency of each lamp.

Every moving part is gear driven, even to the feed and take-up spindles. There are no chains or belts, inside or outside. Gears are fully enclosed and silent.

The Diplomat is constructed to show not only silent film, but sound film as well. Although the sound is not heard, many fine motion pictures formerly restricted to motion-on-film projectors may now be shown on this machine.

Still projection of any single picture is accomplished simply by disengaging the clutch A perforated, all-metal safety shutter operates automatically to protect the film from heat. A reverse lever is provided for running the film backwards to achieve amazing effects or to repeat a scene.

A Bell & Howell 2-inch F 1.6 lens, which transmits a large volume of light, is standard equipment. However, it may be replaced instantly with any one of a full range of extra lenses to meet special requirements.

Self-lock sprockets, a patented device, make incorrect film threading an impossibility. They also materially lengthen the life of the film by exerting less strain and pull.

color) with Esther Williams and John Carroll.

Henry Stradling, "Till the Clouds Roll By," (Technicolor) with Judy Garland, Robert Walker, Frank Sinatra.

Karl Freund, "You Were There," starring Katharine Hepburn and Robert Taylor.

Robert Planck, "The Show-Off," with Red Skelton, Marjorie Maxwell, Maybelle Mann.

Charles Schoenbaum, second unit, "Gentleman's Gentleman," (Technicolor).

Paramount

Russell Metty, "The Perfect Marriage," (Hal Wallis Prod.) with Loretta Young, David Niven, Nona Griffith, Virginia Field.

Laurel Landon, "O. S. S.," with Alan Ladd, Geraldine Fitzgerald, Patrice Knowles.

Ben Kluge, "Danger Street," (Pine-Thomas Productions) with Jane Withers, Robert Lowery, Bill Edwards.

Daniel Fapp, "Suddenly It's Spring," starring Fred MacMurray and Paulette Goddard.

Ray Brennehan, "Perils of Pauline," (Technicolor) starring Betty Hutton with John Lund, William Demarest, Billy De Wolfe, Constance Collier.

RKO

Jack Greenhalgh, "Avalanche," (Imperial Films) with Bruce Cabot and Roscoe Karns.

RKO Studios

Lee Tower, "Distracted Woman," with Joan Bennett, Robert Ryan, Charles Rickford, Virginia Huston.

Roy Neel, "A Lively Story," with Bill Williams, Barbara Hale.

George Barnes, "Staked the Sailor," (Technicolor), with Douglas Fairbanks, Jr., Maureen O'Hara, Walter Slezak.

Jack McKenzie, "Child of Divorce," with Sherry Moffett, Regis Toomey, Midge Meredith, Walter Reed.

Republic Studios

John Alton, "The Ghost Goes Wild," with James Ellison, Anne Gwyne, Ruth Donnelly, Edward Everett Horton.

Henry Sharp, "The Fabulous Suzanne," (Steve Sekely Prod.) with Barbara Britton, Rudy Vallee, Bill Henry, Otto Kruger, Veda Ann Borg.

20th Century-Fox

Ernest Palmer, "Three Little Girls in Blue," (Technicolor) with Jane Haver, Vivian Blaine, George Montgomery, Frank Latimore.

Charles Clarke, "Margarita," (Technicolor), with Jeanne Crain, Alan Young, Glenn Langan, Lynn Bari, Betty McDonald, Esther Dale.

Joseph L. Schabo, "Candace and David," with Dorothy McGuire, Robert Young, John Sutton, Rose Hobart, Gail Patrick, Harry Davenport.

(Continued on Page 106)

Positive View Finder For Cameras

(Continued from Page 24)

Magnification is produced as the variator barrel is moved toward the rear stationary lens. What happens here, of course, is that the combined focal length of the front stationary lens and the front variator lens increase because the spacing between these two lenses becomes wider. Simultaneously the rear variator lens begins to combine its power with that of the rear stationary lens. Fig. 2 (b) shows what takes place here. By moving the variator barrel, the focal length of the combined front stationary lens and front variator lens becomes longer, while the focal length of the combined rear variator lens and rear stationary lens shortens as the spacing between them decreases. Thus, the change from a reduced image to an enlarged one occurs when the combined focal length of the front optical elements become greater than the combined focal length of the rear elements.

The biggest magnification is produced by the vari-focal system when, in the extreme rear position, the image formed by the front stationary lens falls into the front variator lens. In this position the vari-focal system covers only a small field angle and therefore corresponds to a telephoto lens. (See Fig. 2 (c).)

Two serious disadvantages to the vari-focal system as a complete view-finder when used alone have been overcome in the new positive view-finder. It has been noted, of course, that the objective lens combination produces an inverted image, an objectionable feature in a view-finder. A more serious defect of the "variator" system lies in the fact that the image moves in opposite direction to the movement of the "variator" barrel from the inside of the rear "variator lens" to the inside of the front "variator" lens. So in spite of being a real image, it cannot be focused.

Combined with the vari-focal system to overcome these disadvantages is an erecter system. Fig. 3 is a diagrammatic representation of the view-finder. The dotted line separates the vari-focal mechanism from the erecter system. This erecter system acts practically as a second telescope which collimates the image through the combination of the variator and the stationary lens.

This new image is not only upright as the name erecter system implies, but it remains practically stationary when the erecter system, because the optical elements of this second telescope do not change. Therefore, a frame can be placed at the image point which corresponds to the size of the film frame and which shows accurately the image which will be produced by the corresponding camera lens.

A cross section through the actual view-finder, illustrated in Fig. 4, shows how the optical elements are arranged.

Filming Rockets

(Continued from Page 26)

Allen Thompson, A. S. C., who was originally with the unit and transferred after two years of service and chief photographers' mate Harold Folan.

Results accomplished, Commander Gills ducked, were only possible through efficiency, skill, and daring of these and other members of his unit—always working under the most hazardous conditions.

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The Fluid Camera

(Continued from Page 82)

as a trailing shot in which the camera actually follows right along with the subject in his course of action.

In this type of shot the camera's motion for movement is usually pretty well established, since it depends upon and is keyed to the movement of one of the players. The effect to be desired, as in all types of camera movement, is smoothness—since a jerky pattern of movement would detract more from the scene than it would add. If the camera glides smoothly along, the audience will not be consciously aware of the movement in itself.

Another type of moving camera shot is the pull-back, in which the scene opens with a close-up, the camera later pulling back to present a much wider angle of the scene. This device is used where it is first necessary to focus the audience's attention on a certain small detail of the scene, later broadening the angle to show the context in which that detail is mounted.

In the film, "The Lost Weekend," photographed with superb realism by John Stutz, A.S.C., there was some memorable scene of this type that opened with a striking super close-up of the main character's eye as it fluttered open, bloodshot and bleary, the eye of a drunkard. The camera then pulled back to a medium long shot of the character as he awakened from his stupor and began to stumble about the room. In this shot, the close-up of the eye was the keynote of the scene. It set the psychological mood; it focused the audience's attention by fixing the screen with a small but vital detail of the character's state of being. The initial impression created by that close-up carried over to the remainder of the scene and influenced the audience's reception of what followed.

A corollary to this type of shot is a device in which the camera first shows a long shot of the scene and then pushes in to a close shot of a certain segment of the action. This is a widely used type of camera movement and has the effect of first orienting the audience as to locale,

action, and period, before moving in to treat dramatically a smaller part of the overall scene.

A variation of this technique is the zoom shot, in which for dramatic effect the camera first shows a relatively wide angle of the scene, then rapidly pushes or zooms in to a close-up of a specific detail of the scene. The zoom shot, when correctly used, is a dynamic way to focus audience attention on a dramatically important facet of the scene.

Except in a travelogue, it is not considered effective technique to pan a static object—although many film-makers have done so in an effort to force action into an otherwise dead scene. At best this is a forced technique and should be avoided except where inserted for special effect. More movement of the camera can never compensate for a lack of action within the scene.

Occasionally in a photograph, the camera—in its role of all-seeing eye—becomes a wandering reporter, browsing here and there to pick up bits of action and characteristics, then moving on to select other facets of the situation, the sum total of which adds up to the creation of an omniscient atmosphere. A notable example of this technique was used in the film, "Casablanca," photographed by Arthur Edison, A.S.C. In the sequence establishing the interior of "Rick's Cafe Americain" (main locale of the story), the camera poked its way through the crowds, stopping at various tables just long enough to pick up scraps of color and atmosphere, then moving on. It moved exactly as a casual observer might move if he were threading his way through the maze of tables, catching a glimpse of this person or that and overhearing an occasional shred of conversation. The effect in the film was to set the unusual mood of this exotic locale, to identify the types and characters involved in the story, and to prepare the audience for the action that was to follow.

In studio pictures, whenever the camera moves and comes to rest on a new composition, the movement is known as a *move-a-stop*. Certain scenes, especially in musical extravaganzas, involve a great many camera stops. In fact, when this type of film was first becoming popular certain directors and cameramen (as a matter of professional achievement) used to vie with one another to see how many camera stops they could get into one continuous scene. Actually, if well done, this type of scene is more effective than a series of cuts in portraying a musical number, but when camera movement becomes an end in itself, the result is bound to be clumsy and without meaning.

One otherwise competent director of musicals and light comedies used to insist that the camera be moving in every scene. He would have the camera pushing in, pulling back, zooming down from the sky or up from the ground, whether the scene required camera movement or not. In one film this particular director

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shot—a film containing well over 300 scenes—there was only one scene that was absolutely a static shot. Audiences left the theatre after viewing this film complaining of headaches from being “whorled around so much.”

At the other extreme was an equally competent director of dramatic themes who insisted that the camera should never be moved. His compositions on the screen were particularly forceful and artistic, but he was reluctant to move the camera for fear his careful composition would be destroyed. As a result, his action within the frame was stifled, inhibited, held back. You could almost sense his players watching for the chalk marks on the set floor so that they would not step outside the bounds of the static frame. In one drama that this director shot—a film crammed full of artistic and static compositions—there was only one short follow shot. The result on the screen was a static drama.

Obviously, intelligent camera movement is the result of close, careful planning between the director and cameraman. The director, in his interpretation of the author's screenplay, plans his action and consults with the cinematographer as to how that action can most effectively be portrayed on the screen. Often it is found that a series of consecutive compositions can be embodied in one scene and connected by well-motivated camera movement. The resulting scene (which otherwise would have been staged as a series of short choppy scenes) becomes a fluid continuity of changing compositions that move smoothly, one into the other.

Arthur Miller, A.S.C., who has photographed such cinematic masterpieces as “How Green Was My Valley” and “Song of Bernadette,” is a cinematographer who uses the fluid camera to best advantage. His camera, never self-conscious, glides in and out of the scene searching and selecting those elements which are important to the film narrative.

Joseph Rattienberg, A.S.C., has demonstrated in films such as “Gaslight” and “Valley of Decision,” that a smoothly moving camera is a forceful complement to well-staged action. Coupled with a mellow lighting style, his fluid technique of camera movement—always original, but never obtrusive—gives depth and perspective to the action as depicted by the director.

Joseph LaShelle, A.S.C., winner of last year's Academy award in black and white cinematography for his crisp, forceful lensing of the film, “Laura,” is a cinematographer who excels in the intelligent application of fluid camera movement to action on the screen. He has a particular genius for breaking a scene down into various forceful compositions and joining these different “points of view” together through smooth camera movement. Some of the things his camera does seem incredible when analyzed, but on the screen a close-up gives way to a long shot which then evolves

into a follow shot, without the audience being aware of the actual camera movement. Mr. LaShelle combines his inclusive understanding of the fluid camera with a graphic, forceful style of lighting which is at the same time artistic and dynamic, as evidenced in such films as, “Hangover Square” and “Fallen Angel.”

The fluid camera is a device that be-

longs peculiarly to the photography. It has the quality of action that is essential if motion pictures are to be truly “moving” pictures. Skillfully used, camera movement gives the motion picture unlimited scope to select and present on the screen the various elements of the story in dramatic and forceful relationship to one another.



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Aces of the Camera

(Continued from Page 84)

townsmen was a series of stereoscopic slides showing the devastation that followed the earthquake and fire that had ripped San Francisco in the preceding April. It was a successful venture, financially speaking, but Paul felt a certain chagrin in the fact that his pictures still failed to move.

Then he heard that in the neighboring town of Tucson there was a "black-top" showing the most astounding motion pic-

ture of all time, "The Great Train Robbery"; 1000 feet of action packed drama. Paul had to see it. And having seen it he had to see the manager who, probably to save himself a lot of trouble, gave him the job of projectionist.

When the family moved to California later that year Paul was supposed to continue his studies at U.S.C., but so badly had he been bitten by the movie bug that, to keep peace in the family, his father bought a movie house in Sawdelle so that Paul could be a projectionist. That should have taken care of everything, but it didn't. Paul decided that he not only wanted to show motion pictures, he wanted to make them.

The first thing he needed, obviously, was a motion-picture camera. So he decided to make one. He was handicapped by the fact that he had never seen a motion picture camera, but armed with an Eberhardt-Schneider catalogue and the innards of an old Melox projector he set to work. Slowly, very slowly and painstakingly the pieces were fitted into place and enclosed in a plywood box of enormous dimensions. On the front was mounted an old Duobut 2 4/5 lens from a still camera, and, because he still had vivid memories of "The Great Train Robbery," and "The Counterfeiters", and believed that films were all made on the same piece of film and in sequence, there was another lens on top to hold a thousand feet of film.

It was a crude and unworldly affair, but it worked. With it he shot news subjects which were sold to the old Gasmet News. The fire at Venice Pier constituted his first sale, but the check that came in payment for the footage was only a symbol; the satisfaction was in the realization of an ambition.

Then in 1912, Paul became a charter member, number 36, of Local 159, Los Angeles. He worked as projectionist at the Edison, the Clute, at 5th and Main Streets, and was also the instructor at Clute's school of projection which that early day showman had on the second floor of his exchange at 9th and Main. Paul was well established in his profession. Everything looked rosy. And then his fiancée, the girl he subsequently married, moved with her family to San Diego.

To those who have been in less it will be no news that Paul went to San Diego. While he was wandering around down there he found a movie house that had

been closed. Inquiry disclosed the fact that it was in the hands of the bank, and so Paul went to see that institution. He told the banker that he was a projectionist and that he was sure he would be able to make a go of the house if only they would let him open it. The banker thought it was a good idea, too, and told Paul that he could have the place for a rental of \$50.00 a month. And Paul agreed that would be a very reasonable rental. The only trouble was he had 50 cents, not 50 dollars. And then there was another matter, the banker explained; there was no projector. That did complicate matters. But only for a moment. Paul had made up his mind. He told the man he was sure he could get a projector from T. L. Tully the big theater owner in Los Angeles, and the man was apparently so encouraged by such talk that he agreed, if Paul could get a projector, to let him have the first month's rent on the roof.

Financed by a five-dollar bill borrowed from his future mother-in-law Paul returned to Los Angeles. Mr. Tully came through with the projector and even allowed Paul credit on his first week's film rental. Everything had worked out perfectly. Until they went to plug in the projector. There was no jux.

The banker was sympathetic when Paul explained his new difficulty, but he insisted that he had made it perfectly clear that there was no absolutely hooked up. "But we can't quit now," Paul protested. "I guess you're right," agreed the banker. "I'll put up the money for the installation out of my own pocket."

The theater was a great success, and soon became one of those that Paul owned and operated in San Diego. One of these three houses he equipped for sound in 1913, using the Edison Cameraphone system. In the other two houses he had sound-effects men, working with paraphernalia similar to that used by sound-effects men in radio today, concealed behind the screen.

It is interesting to recall that the Edison Cameraphone Sound System consisted of two cylinder phonographs that played behind the screen. In order to maintain some degree of synchronization it was necessary for the projectionist to crank faster or slower so the common denominator. Each record ran for a quarter of a reel at which point the phonograph operator would have to switch to the other machine. The subjects made with sound were mostly scenes from vaudeville acts.

During this period Paul built a studio out in the Mission Hills district of San Diego; and with a Pathe camera, and later with a Gasmet "beamer type" camera, made comedies. His cost was con-

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Aces of the Camera

(Continued from Preceding Page)

named that he was put in charge of the camera and the truck department. And there he developed the first grabber tripod, a device to circulate the rolling of the ocean and a boom to cameramen with a weakness for mid-deaner.

It was here, too, that he built the first stage exclusively for truck work and on which he made his first process shot in 1921. This shot was made for a picture entitled, "Sahara", starring Louise Glaum; and a brief recounting of the difficulties involved provide a good yardstick to measure the technical progress made to date.

The screen was a piece of white silk 6 ft. x 8 ft. and had to be woven to order in New York. There were no high-intensity arcs, no fast film and no fast lenses. And because no one had ever thought of synchronous motion at that time the actors had to try to make like love while straddling an 80-ft. derrick shaft that connected the camera to the projector. As a "find" it was a notable achievement, but the innovations were so severe that the system had to be abandoned for all practical purposes.

Sam Goldwyn borrowed him from Ince and sent him to Hollywood on "Ben Hur". When he returned he found that the studio had become M.G.M. and he carried on under that banner until 1933, when he went with Goldwyn.

Ince also lent Paul to Dour Fairbanks when that worthy was making "Robin Hood", a picture famous in its day for the high standards of its special effects. Paul stayed on to do "Toss of the Storm Century".

Since 1940 Vern Walker has been fortunate enough to have the services of this credit-strewn Ace of the Camera to support him in the special effects department at R.K.O. Currently Paul is working on "Notorious", for the great Hitchcock; a director who really knows how to get the most out of special effects.

Paul stays in the truck department because he is one of those people who

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likes to have a problem. He particularly likes to do something a director says can't be done. But besides working on the problems other people think up for him he also thinks up ones for himself. His immediate self-imposed problem is the creation of a process screen that can be photographed from any angle. It will

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be a great help, he feels sure, not only in pictures but also in television which will, he asserts, have to use process eventually.

Hobbes? O, yes! He rouses attitude. And maybe that's a commentary when a guy like Paul Eagler has to raise his own.

A.S.C. Assignments

(Continued from Page 100)

United Artists

Lucient Andriot, "The Strange Woman," (Mars Film Corp.) with Hedy Lamarr, George Sanders, Louis Hayward, Gene Lockhart.

James Van Trees, "Angel On My Shoulder," (Premier Productions) with Paul Mann, Anne Baxter, Claude Rains, Connel Stevens.

Karl Struss, "Mr. Ace and the Queen," (Torch Prod.) with George Raft, Sylvia Sydney, Bud Ekins.

Universal Studios

Hal Mohr, "Fandango," (Technicolor)

with Frouse De Carlo, Brian Donlevy, Jean Pierre Aumont, Eve Arden.

George Robison, "Love Takes a Holiday," with Joan Davis, Jack Oakie, Michèle Aene.

Paul Iwano, "Little Miss Bag," with Fay Holden, Beverly Sills.

Warner Brothers

Ernest Haller, "Humoresque," starring Joan Crawford and John Garfield, with Oscar Levant, Ruth Nelson, J. Carroll Nash.

James Wong Howe, "The Sentimental," starring Ann Sheridan, with Kent Smith, Robert Alda, Bruce Bennett.

Ted McCord, "A Very Rich Man," with Sydney Greenstreet, Martha Mielers, Dore Clark, Alan Hale.

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